Nov. 17, 1925. 1,562,032

W. F. LOHMAN

MOLD FOR METALLIC PACKING

Filed June 1, 1925

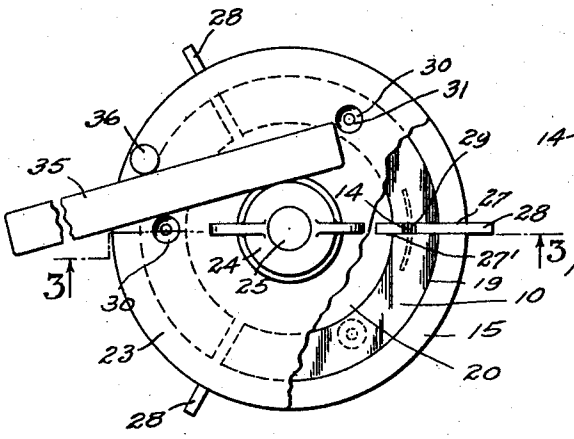


Fig. 2.

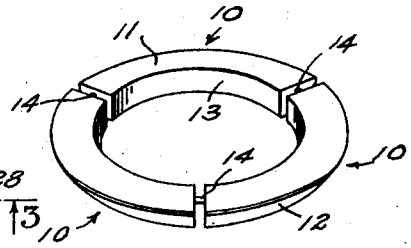


Fig. 1.

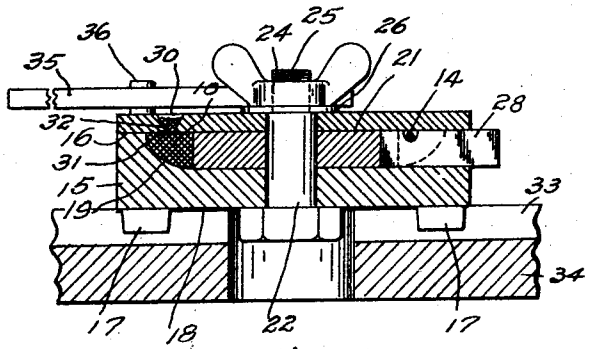


Fig. 3.

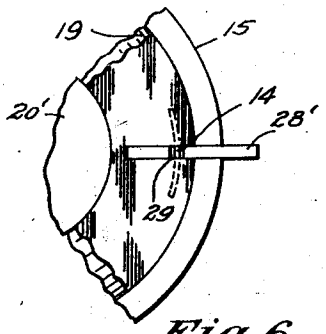


Fig. 6.

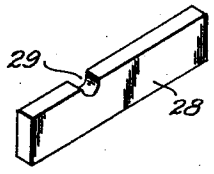


Fig. 4.

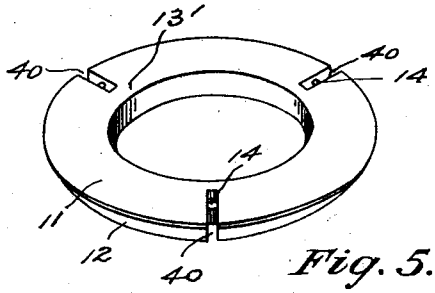


Fig. 5.

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UNITED STATES PATENT OFFICE.

WALTER F. LOHMAN, OF SEATTLE, WASHINGTON.

MOLD FOR METALLIC PACKING.

Application filed June 1, 1925. Serial No. 33,989.

To all whom it may concern:

Be it known that I, WALTER F. LOHMAN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Molds for Metallic Packing, of which the following is a specification.

This invention relates to molds for cast-metal contractile packing-rings for piston rods or the like.

The object of the invention, generally, is to provide a mold whereby the making of rings of this character is facilitated with a lessening of cost.

More specific objects of the invention will appear in the following specification.

The invention consists in the novel construction, adaptation, arrangement and combination of parts hereinafter described and claimed.

In the accompanying drawing,—

Figure 1 is a perspective view of a typical metallic packing ring. Fig. 2 is a plan view of my improved mold for producing a packing ring such as shown in Fig. 1, the cover of the mold body being partly broken away. Fig. 3 is a vertical transverse section taken substantially on broken lines 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the partition elements of the mold shown in Figs. 2 and 3. Fig. 5 is a perspective view of an uncompleted packing ring. Fig. 6 is a plan view showing a portion of a mold for a ring of the character shown in Fig. 5.

The packing ring illustrated in Fig. 1 is of known construction, comprising a plurality of arcuate sections 10, having a plane upper side 11, a spherical lower side 12, and a cylindrical inner peripheral surface 13; the sections of the ring being connected in spaced apart relations by means of wire coupling elements 14 whose ends are embedded in the ends of the respective sections.

In carrying out the present invention I provide a mold consisting, as shown, of a metal body 15, preferably of a cylindrical shape, having a plane upper surface 16 and lugs 17 depending from its lower surface 18.

In the top of the body 15, and concentric to the axis thereof, is a circular recess having a peripheral surface 19 corresponding to the shape of the spherical lower side 12 of the packing ring. Provided within the body recess above referred to is a cylindrical metal block 20 or core, as it will be termed hereinafter, of a height corresponding to the depth of said recess to have the upper surface 21 of the core in a plane with the upper surface 16 of the body. The core is held centrally of the recess by means of a pin or bolt 22 fitting in axially aligned holes of the body and core. Rotatably mounted upon the bolt 22 is a plate cover 23 which is held in juxtaposition with said body and core members by any suitable means, the illustrated means being a winged nut 24 engaging the screw threaded end 25 of the bolt and acts through the medium of a washer 26 which is interposed between said nut and cover. The body 15 and the core 20 are provided with complementary slots 27, 27^1 to receive partitions 28 disposed radially of the mold axis, said partitions serving to divide the annular space surrounding the core into a number of matrices in which are cast the respective sections of a packing ring such as shown in Fig. 1.

Each of said partitions is provided with a notch 29 to accommodate a coupling wire 14 whose ends extend laterally from the respective partition to be embedded in the molten metal which is poured into the matrices.

The pouring of the metal above referred to is effected through gates 30 provided in the cover, one above each matrix, preferably. As shown said gates are each of an inverted truncated conical shape to afford at the bottom of the cover a cutting edge 31 whereby the sprues 32 are severed from the several sections in the mold when the cover is rotated with respect to the body.

In such shearing operation the body 15 is prevented from rotating as by means of its lugs 17 engaging within apertures or a slot such as indicated, for example, by 33 in a support 34.

For rotating the cover there may be employed a bar 35 engaging for instance the cover securing nut 24 and a stud 36 which is rigid with the cover.

In the operation of the above described embodiment of the invention, the body and core are first mounted upon the bolt and the partitions 28 engaged in the slots 27, 27^1. The wire couplings are then placed in the respective partition notches 29. The cover

23 is then mounted upon the bolt and secured to the mold body and its core by means of the nut 24.

Thus assembled, the molten metal is poured through the respective gates 30 into the matrices to fill the latter. After the metal poured into the mold becomes sufficiently solidified, the cover 23 is rotated about the bolt 22 acting as a spindle to effect by means of the shear edges 31 the cutting off of the sprues from the respective ring-sections flush with the plane surfaces 11 thereof.

An advantageous manner of manufacturing a packing ring such as shown in Fig. 1 is to primarily cast the sections in a single piece as shown in Fig. 5 with a continuous inner portion 13^1, which inner portion is subsequently bored or otherwise machined to afford an inner opening of a diameter to include the inner ends of radially disposed slots 40.

This method affords an advantageous means to provide a casting with a stock size outer diameter and which may be conveniently held in a chuck for machining to produce sections of various selected inner radii.

In making an integral casting of the character shown in Fig. 5 the core 20^1 of the mold, Fig. 6, is unprovided with any slots for the partitions, each partition as 28^1 being regulated to extend but part way across the metal receiving matrix of the mold body. Otherewise the mold and manner of employing the same is similar, or substantially so, to the above described mold in which is cast a packing ring composed of sections.

While I have illustrated an described the preferred embodiments of my invention, I do not wish to be understood as confining myself specifically thereto except as limited by the appended claims.

What I claim, is,—

1. In a mold, a body having a circular recess therein, a core provided within said recess, a means engaging the core for positioning the same centrally of the recess, a cover for the body rotatably mounted upon said core positioning means, said cover having gates therein which communicate with said recess, cutting means provided at the under surface of the cover, and means to rotate the cover for actuating said cutting means to separate the sprues within the respective gates from the casting within the mold recess.

2. In a mold, a chambered body, a core provided within the chamber of said body, a pin for positioning said core centrally of the chamber, partition plates extending radially of the mold into said chamber, a cover for the body, said cover being rotatably mounted upon said pin, said cover being provided with a gate formed to afford a metal shearing edge at the under surface of the cover, and means to impart rotary movement to the cover for removing the sprue within the gate from the casting within the body chamber.

3. In a mold of the character described, the combination with a body member provided with a circular recess, a cylindrical core provided within said recess, a pin for positioning the core centrally of said recess, and partitions dividing the annular space surrounding the core into a plurality of matrices, of a cover surmounting the body and core and rotatively mounted upon said pin, means provided upon the pin for securing the cover to the body and to the core, said cover being provided with gates through which molten metal is poured into the respective matrices, said gates being formed to provide the cover with metal shearing edges, and means for rotating said cover to cause said shearing edges to separate the sprues from the casting within the respective matrices.

4. In a mold of the character described, the combination with a body member provided with a circular recess, a cylindrical core provided within said recess, a pin for positioning the core centrally of said recess, said body and core being provided with complementary slots disposed radially of the mold axis, and partitions engaging in said slots to couple the core to said body against independent rotary movement, said partitions also serving to divide the annular space surrounding the core into a plurality of matrices, of a cover surmounting the body and core and rotatively mounted upon said pin, means associated with the pin for securing the cover to the body and core, said cover being provided with gates through which molten metal is poured into the respective matrices, said gates being formed to provide the cover with metal shearing edges, and means for rotating said cover to cause said shearing edges to separate the sprues from the casting within the respective matrices.

5. The combination with a mold having an annular recess therein divided into a plurality of circumferentially disposed matrices, of a cover for said mold, said cover being provided with a plurality of gates through which molten metal is poured into the respective matrices and affording shearing edges at the under side of the cover, and means disposed axially of the mold recess for coupling the cover to the mold, said means also serving as a pivot for the cover.

Signed at Seattle, Washington, this 16th day of May 1925.

WALTER F. LOHMAN.